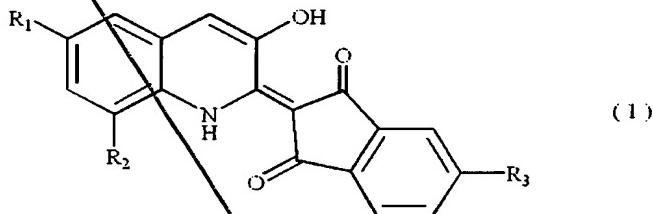


CLAIM

Sub A2 X Aqueous ink for ink-jet recording which contains at least a water-insoluble coloring matter, water and a resin as main components and takes the form of an emulsion, the coloring matter being at least one yellow hue coloring matter selected from the group consisting of

a quinophthalone compound represented by the formula (1);

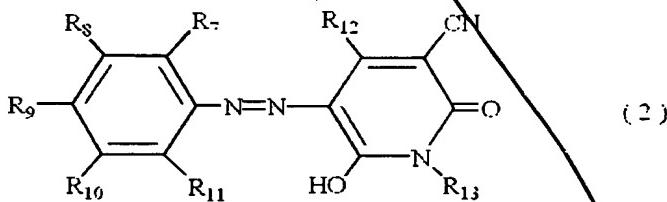


(1)

wherein

each of R₁ to R₃ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, -CONR₄R₅, or -COOR₆ (in which each of R₄ to R₆ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted aryl group), and all of R₁ to R₃ are not a hydrogen atom at the same time, and

a pyridone azo compound represented by the formula (2);



(2)

wherein

each of R₇ to R₁₁ independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, -NR₁₄R₁₅ (in which R₁₄ and R₁₅ independently, represents a hydrogen atom, an

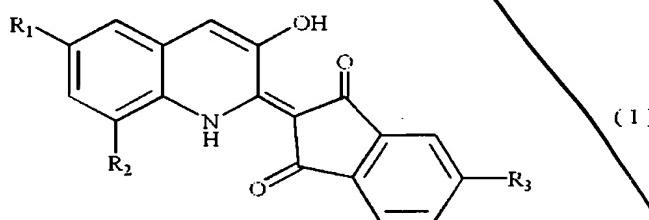
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unsubstituted or substituted alkyl group, an aralkyl group), -COX₁ [in which X₁ represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ (in which each of R₁₆ and R₁₇, independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group)], -COO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄ (in which each of X₂ to X₄, independently, represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3),

R₁₂ represents an unsubstituted or substituted alkyl group,

R₁₃ represents an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group.

2. The aqueous ink for ink-jet recording according to claim 1 wherein the yellow hue coloring matter is a quinophthalone compound represented by the formula (1);



wherein

each of R₁ to R₃, independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, -CONR₄R₅, or -COOR₆ (in which each of R₄ to R₆, independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted

Sub A9

aryl group), and all of R₁ to R₃ are not a hydrogen atom at the same time.

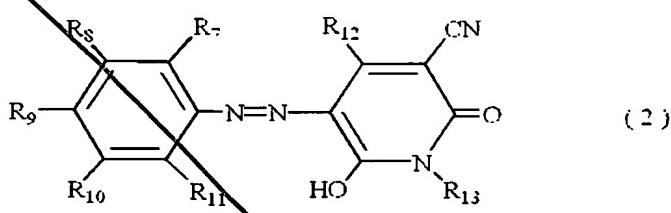
3. The aqueous ink for ink-jet recording according to claim 2 wherein R₂ and R₃ in the formula (1) are -CONR₄R₅ or -COOR₆ (in which each of R₄ to R₆ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted aryl group).

4. The aqueous ink for ink-jet recording according to claim 2 wherein R₁ in the formula (1) is a hydrogen atom, or an unsubstituted or substituted alkyl group having 5 or less carbon atoms, and one of R₂ or R₃ is a hydrogen atom and the other is -CONR₄R₅ or -COOR₆ (in which each of R₄ to R₆ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted aryl group).

5. The aqueous ink for ink-jet recording according to claim 2 wherein R₁ in the formula (1) is a hydrogen atom, or an unsubstituted or substituted alkyl group having 5 or less carbon atoms, R₂ is a hydrogen atom, and R₃ is -CONR₄R₅ (in which each of R₄ and R₅ independently, represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms, or an unsubstituted or substituted aryl group).

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6. The aqueous ink for ink-jet recording according to claim 1 wherein the yellow hue coloring matter is a pyridone azo compound represented by the formula (2);



wherein

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Claim*

each of R₇ to R₁₁ independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, -NR₁₄R₁₅ (in which each of R₁₄ and R₁₅ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an aralkyl group), -COX₁ [in which X₁ represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ (in which each of R₁₆ and R₁₇ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group)], -COO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄ (in which X₂ to X₄ represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3),

R₁₂ represents an unsubstituted or substituted alkyl group,

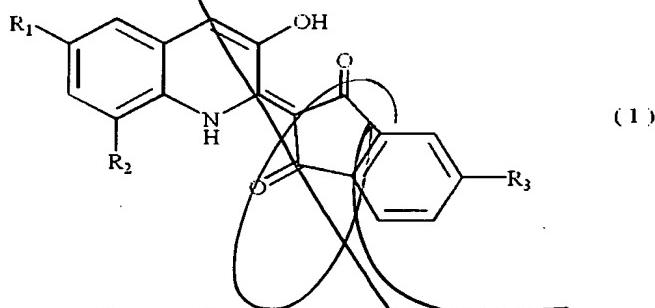
R₁₃ represents an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group.

7. The aqueous ink for ink-jet recording according to claim 6 wherein at least one of R₇ to R₉ in the formula (2) is -COX₁, and R₁₃ is an unsubstituted or substituted alkyl group.

8. The aqueous ink for ink jet recording according to claim 7 wherein the unsubstituted or substituted alkyl group represented by R₁₃ in the formula (2) is a linear or branched alkyl group having 8 or more carbon atoms, or -(CH₂)_nCOR₁₈ having 8 or more carbon atoms [in which R₁₈ represents an

unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or $-NR_{19}R_{20}$ (in which each of R_{19} and R_{20} independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group), and n is an integer of 1 or 2].

9. A quinophthalone compound represented by the formula (1);



wherein

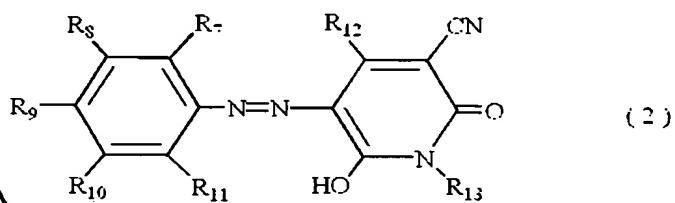
R_1 represents a linear, branched or cyclic alkyl group having 2 or more carbon atoms,

R_2 represents a hydrogen atom,

R_3 represents $-CONR_4R_5$ (in which each of R_4 and R_5 independently, represents a linear, branched or cyclic alkyl group having 6 or more carbon atoms).

10. The quinophthalone compound according to claim 9 wherein in the formula (1), R_1 is isopropyl group, R_2 is a hydrogen atom, R_3 is $-CONR_4R_5$ (in which each of R_4 and R_5 independently, represents a linear or branched alkyl group having 8 or more carbon atoms).

Sabu AY N A pyridone azo compound represented by the formula (2);



wherein

each of R₇ to R₁₁ independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, -NR₁₄R₁₅ (in which each of R₁₄ and R₁₅ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an aralkyl group), -COX₁ [in which X₁ represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ (in which R₁₆ and R₁₇ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group)], -COO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄ (in which X₂ to X₄ represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3),

R₁₂ represents an unsubstituted or substituted alkyl group,

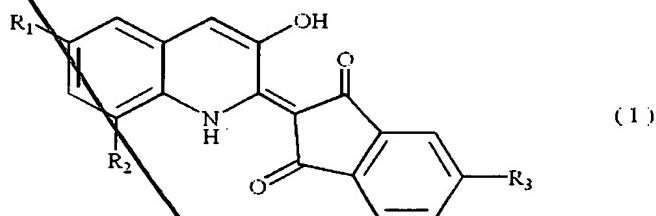
R₁₃ represents an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group.

12. The pyridone azo compound according to claim 11 wherein in the formula (2), at least one of R₇ to R₁₁ is -COX₁, and R₁₃ is an unsubstituted or substituted alkyl group.

~~13.~~ The pyridone azo compound according to claim 12 wherein in the formula (2), at least one of R_7 to R_{11} is $-CONR_{16}R_{17}$.

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~~14.~~ A resin fine particle colored by at least one yellow hue coloring matter selected from the group consisting of;

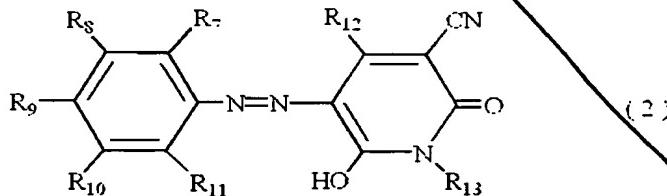
a quinophthalone compound represented by the formula (1);



wherein

each of R_1 to R_3 independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, $-CONR_4R_5$, or $-COOR_6$ (in which each of R_4 to R_6 independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted aryl group), and all of R_1 to R_3 are not a hydrogen atom at the same time, and

a pyridone azo compound represented by the formula (2);



wherein

each of R_7 to R_{11} independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, $-NR_{14}R_{15}$ (in which each of R_{14} and R_{15} independently, represents a hydrogen

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atom, an unsubstituted or substituted alkyl group, or an aralkyl group), -COX₁ [in which X₁ represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ (in which each of R₁₆ and R₁₇, independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group)], -CQO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄ (in which X₂ to X₄ represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3),

R₁₂ represents an unsubstituted or substituted alkyl group,

R₁₃ represents an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group.

15. A dispersion obtained by dispersing in a water medium the resin fine particles of claim 14.